CLASS I APPLICATION REVIEW

FOR:

BARRICK CORTEZ, INC.

Crescent Valley, Lander County, Nevada

HA 54

Class I Air Quality Operating Permit AP1041-2141

FIN A0001

Minor Revision

Application Log # 6980

BY

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

RANDY PHILLIPS
STAFF ENGINEER

FEBRUARY 2013

1.0 INTRODUCTION

Barrick Cortez Inc. (Barrick) submitted a Class I minor revision application on June 28, 2012, for a minor revision to their existing Class I (Title V) air quality operating permit AP1041-2141. Barrick's minor revision application was determined to be administratively complete by default on July 12, 2012 by the Nevada Division of Environmental Protection - Bureau of Air Pollution Control (NDEP-BAPC). The NDEP-BAPC case log number for this application is #6980. On July 30, 2012, NDEP-BAPC requested additional information from Barrick by August 10, 2012 to support the minor revision. The requested information was submitted on October 8, 2012. The permit issuance date was extended by 58 days. On October 22, 2012, NDEP-BAPC requested additional information from Barrick by August 30, 2012 to support the minor revision. The requested information was submitted on December 4, 2012. The permit issuance date was extended by an additional 34 days. The final permit issuance date for the Class I minor revision was extended to April 11, 2013.

Pursuant to NAC 445B.3425(3)(b), a copy of the Minor Revision application and draft permit will be sent to the Environmental Protection Agency for the required 45 day review. A 30 day public notice was not initiated because the minor revision does not result in a significant change in air quality at any location where the public is present on a regular basis (NAC 445B.3395.8(c)). This minor revision proposes to:

1. Revise System 10 (Pipeline Carbon Kilns S2.007 and S2.008) by increasing the PM, PM_{10}, and CO emission limits for the Pipeline Carbon Kilns. The changes are a result of July 2012 performance testing.
2. Revise System 11 (Pipeline Carbon Stripping Vessel Heaters S2.009 and S2.010) by increasing the heat input rating for each unit from 8.0 MMBtu/hr to 12.6 MMBtu/hr, increasing the fuel usage from 87.5 gallons/hr to 138 gallons/hr, and increasing the emission limits for all regulated pollutants. The two emission units were renamed to replace the term "boiler" with "heater". The two heaters will become subject to 40 CFR Part 60 Subpart Dc (greater than 10 MMBtu/hr).
3. Revise System 12 (Pipeline Mill 50 Ton Lime Silo, PF1.028) by increasing the lime unloading rate from 1 ton/hr to 4 tons/hr.
4. Revise System 31 (Cortez Hills Metallic Ore Crushing System, S2.028-S2.033) by increasing the flow rate of the baghouse from 37,397 dscfm to 40,000 dscfm and increasing the PM and PM_{10} emission limits.
5. Revise System 32A (Cortez Hills Metallic Ore Overland Conveying System Alt Scenario, S2.043A and PF1.093) by increasing the hourly throughput from 1,000 tons/hr to 1,250 tons/hr and increasing the hourly PM/PM_{10} emissions.
6. Remove System 47 (Cortez Hills Underground Mine Shaft Heaters S2.047-S2.048, reclassified as trivial activities).
7. Revise System 49 (Gasoline Dispensing Stations). System 49 renamed System 49A (Pipeline Gasoline Dispensing Station, S2.049, existing unit), System 49B (F-Canyon Gasoline Dispensing Station, S2.050, existing unit), and System 49C (Cortez Hills Gasoline Dispensing Station, new unit S2.056). Revise location for System 49A. Revise name for System 49B from Cortez Mill tank to F-Canyon tank. Reduce size of tank for System 49B from 4,000 gallons to 3,500 gallons.
8. Add System 52 (A30 Lime Silo, units S2.051, PF1.201, PF1.202).
9. Add System 53 (A30 Lime Silo, units S2.052, PF1.203, PF1.204).
10. Add System 54 (A30 Lime Silo, units S2.053, PF1.205, PF1.206).
11. Add System 55 (Cement Silo, units S2.054, PF1.207).
12. Add System 56 (A30 Emergency Diesel Generator, S2.055).
13. Add System 57 (A34 Emergency Diesel Generator, S2.056).
14. Add System 58 (Underground Emergency Diesel Generator, S2.057).

15. Add System 59 (Scale Building Emergency Diesel Generator, S2.058).
16. Remove General Construction Conditions in Section II for S2.009-S2.010-S2.018g-PF1.161-PF1.162-PF1.163-PF1.169-PF1.170-PF1.171-PF1.172-PF1.173-PF1.174-PF1.175-PF1.179-PF1.180. Conditions have been satisfied.
17. Remove Specific Construction Requirements in Section IIA for System 8 (S2.002-003, testing completed July 2012), System 51A (PF1.161, testing completed June 2012), System 51B (PF1.162, testing completed June 2012), System 51C (PF1.163, testing completed June 2012), System 51E (PF1.169-170-171-172-173-174-175-179-180, testing completed June 2012).
18. Revise Method 9 test duration from 3 hours to 30 minutes in Section IIA for emission units PF1.151-PF1.153, PF1.155, PF1.157-PF1.159, PF1.164-PF1.168, PF1.176-PF1.178, PF1.181-PF1.191, and PF1.193-PF1.199 that are subject to 40 CFR Part 60 Subpart OOO. The test duration for process fugitive sources subject to Subpart OOO was revised in 2009.
19. Facility changes result in a net increase of 4.91 tons/yr PM, a net increase of 4.12 tons/year PM_{10}, a net increase of 2.42 tons/yr for NOx, a net increase of 1.36 tons/yr for SO_2, a net increase of 57.30 tons/yr for CO, and a net increase of 7.40 tons/yr for VOCs.

The principal operation for Barrick is metal mining and the processing of gold ores (SIC code 1041). Barrick's current operations consist of the Pipeline Mine and the Cortez Mill. Under the existing Class I Air Quality Operating Permit, Barrick is permitted to operate three open pit mines, four heap leach facilities, five crushing plants, two precious metals carbon-in-leach (CIL) mills, a resin-in-pulp (RIP) mill, a refinery, assay laboratory, several lime silos for heap leach operations, shotcrete plant, underground backfill plant, aggregate processing plants, and soil/remediation operations. All activities under the existing Class I Air Quality Operating Permit are located on contiguous property owned and controlled by Barrick.

Mercury emissions associated with the refinery operations at Pipeline Mill are currently accounted for under a separate Air Quality Operating Permit AP1041-2220, pursuant to the Nevada Mercury Control Program.

Barrick is accessed from I-80 at Exit 261, proceeding 38 miles south on State Highway 306 to the sites. Barrick is situated within Sections 1 and 12, T26N, R47E; Sections 6 and 7, T26N, R48E; Sections 1 and 12, T27N, R46E; Sections 4-10, 13-18, 23-26, 35-36, T27N, R47E; Sections 25 and 36, T28N, R46E; and Sections 28-33, T28N, R47E. NAD 83 (Zone 11) UTM coordinates for the Cortez Operations Office site are 4,449.90 km North and 532.55 km East. NAD 83 (Zone 11) UTM coordinates for the Pipeline Operations Office site are 4,456.90 km North and 524.00 km East. Barrick is located in Hydrographic Area (HA) 54. HA 54 is currently unclassified for PM_{10}, NOx, CO, SO_2, O_3, and lead criteria pollutants.

The revised total facility-wide (includes insignificant activities) particulate matter (PM) emissions are calculated at 211.2 tons/year (tpy), PM_{10} (particulate matter less than 10 microns in diameter) emissions are calculated at 123.1 tpy, NOx emissions are calculated at 124.0 tpy, SO_2 emissions are calculated at 11.9 tpy, CO emissions are calculated at 82.9 tpy, and VOC emissions are calculated at 19.85 tpy. Therefore, the facility under the revised permit is still a Class I (or Title V) source based on PM_{10} and NOx emissions, which both exceed 100 tpy. In addition, the facility will emit less than 10 tpy of any single hazardous air pollutant (HAP) and less than 25 tpy of any combination of HAPs. Refer to Attachment 2 (Emissions Inventory) for the emissions calculations.

1.1 PROPOSED MODIFICATIONS - OVERVIEW

A complete description of the current Barrick operations are detailed in the technical review for the new Class I permit that was issued January 28, 2008 and in the technical reviews for minor revisions issued on March 11, 2009, December 11, 2009, September 20, 2010, August 2, 2011, December 7, 2011, and April 3, 2012. Only a description of the changes to the Class I air permit in the current minor revision are detailed in this review.

1.2 SYSTEM 10 – PIPELINE CARBON REACTIVATION KILNS (S2.007 – S2.008)

The emission limits for the two existing carbon kilns will be increased based on July 2012 performance testing of the kiln stacks. PM/PM_{10} emissions will increase from 0.013 lbs/hr and 0.056 tons/yr to 0.10 lbs/hr and 0.44 tons/yr for each heater. CO emissions will increase from 0.71 lbs/hr and 3.10 tons/yr to 6.00 lbs/hr and 26.28 tons/yr for each heater.

1.3 SYSTEM 11 – PIPELINE CARBON STRIPPING VESSEL HEATERS (S2.009 – S2.010)

The emission unit description for S2.009 and S2.010 will be changed so that the word "boiler" is replaced with "heater". The heat input rating for the two existing propane-fired heaters will be increased from 8.0 MMBtu/hr to 12.6 MMBtu/hr. The two existing heaters will operate for 24 hours per day and 8,760 hours per year. Propane fuel usage rates for each heater will be increased from 87.5 gallons per hour to 138 gallons per hour. Emissions from the heaters will be uncontrolled. PM/PM_{10} emissions will increase from 0.061 lbs/hr and 0.27 tons/yr to 0.097 lbs/hr and 0.42 tons/yr for each heater. NOx emissions will increase from 1.14 lbs/hr and 4.98 tons/yr to 1.79 lbs/hr and 7.86 tons/yr for each heater. SO_2 emissions will increase from 0.13 lbs/hr and 0.57 tons/yr to 0.20 lbs/hr and 0.89 tons/yr for each heater. CO emissions will increase from 0.66 lbs/hr and 2.87 tons/yr to 1.04 lbs/hr and 4.53 tons/yr for each heater. VOC emissions will increase from 0.070 lbs/hr and 0.31 tons/yr to 0.11 lbs/hr and 0.48 tons/yr for each heater. Emission rates for the heaters were estimated using AP42 emission factors from section 1.5. The increase in the MMBtu/hr rating will require the two heaters to be subject to 40 CFR Part 60 Subpart Dc (subject of MMBtu/hr $\geq$ 10).

The proposed changes to System 11 will require performance testing for the two revised heaters. Specific construction conditions in the revised permit (Section IIA) will require NOx (EPA Method 7), CO (EPA Method 10), and visible emissions (EPA Method 9) within 180 days of issuance of the revised operating permit. In addition, performance testing on the two heaters will be required within 180 days from expiration of the operating permit, but no later than 365 days from the date of expiration of the operating permit. The end of permit testing required in Section XI of the revised permit will be for NOx (EPA Method 7), CO (EPA Method 10), and visible emissions (EPA Method 9).

1.4 SYSTEM 12 – PIPELINE MILL 50 TON PEBBLE LIME SILO (S2.012, PF1.028)

The lime unloading rate for the pebble lime silo will increase from 1.0 tons/hr to 4.0 tons/hr. Emission rates do not change.

1.5 SYSTEM 31 – CORTEZ HILLS METALLIC ORE CRUSHING SYSTEM (S2.028-S2.033)

The dscfm rating for the baghouse that controls System 31 was increased from 37,397 dscfm to 40,000 dscfm. PM/PM_{10} emissions for the baghouse exhaust will increase from 6.41 lbs/hr and 28.08 tons/yr to 6.86 lbs/hr and 30.03 tons/yr. Emissions are based on a grainloading value of 0.02 grains/dscf.

1.6 SYSTEM 32A – CORTEZ HILLS OVERLAND CONVEYING SYSTEM (S2.034A, PF1.093)

The hourly throughputs for System 32A will be increase from 1,000 tons/hr to 1,250 tons/hr. The annual tonnage will not change. The hourly PM emissions for PF1.093 will increase from 2.08 lbs/hr to 2.60 lbs/hr. The hourly PM_{10} emissions for PF1.093 will increase from 0.98 lbs/hr to 1.23 lbs/hr. Emissions are based on emission factors based on AP-42 Section 13.2.4 with a moisture content of 3% and wind speed of 7.0 mph.

1.7 SYSTEM 47 – SHAFT HEATERS (S2.047 – S2.048)

Barrick has requested the removal of System 47 (Cortez Hills Underground Mine Shaft Heaters, S2.047 and S2.048). The two 8 MMBtu/hr propane-fired heaters duct combustion gases along with heated air to underground. There is no exhaust stack for the exhaust gases. Underground mining activities are classified as trivial activities and are not required to be permitted. Emissions from trivial activities are not accounted for in the facility-wide emissions inventory. Based on compliance inspections (photos of the shaft heaters are located in the Barrick Cortez fin folder) and the lack of an exhaust stack to the atmosphere, NDEP-BAPC will remove the shaft heaters from the air permit.

1.8 SYSTEMS 49A/B/C – GASOLINE DISPENSING STATIONS (S2.049, S2.050, S2.056)

System 49 will be renamed System 49A (Pipeline Gasoline Dispensing Station, S2.049, existing unit), System 49B (F-Canyon Gasoline Dispensing Station, S2.050, existing unit), and System 49C (Cortez Hills Gasoline Dispensing Station, new unit S2.056). The location for System 49A was revised. The name for System 49B was changed from Cortez Mill tank to F-Canyon tank. The size of the tank for System 49B was reduced from 4,000 gallons to 3,500 gallons. A new 12,000 gallon tank was added (System 49C, S2.056). The gasoline tanks are permitted pursuant to 40 CFR Part 63 Subpart CCCCCC, NESHAP for gasoline dispensing facilities. The monthly throughput for the System 49A tank will not exceed 37,500 gallons per month. The monthly throughput for the System 49B tank will not exceed 12,500 gallons per month. The monthly throughput for the System 49C tank will not exceed 50,000 gallons per month. Emissions are based on the EPA Tanks program.

1.9 SYSTEMS 52-53-54 – 200 TON LIME SILOS (S2.051-S2.053, PF1.201 – PF1.206)

Three new lime silo operations will be added to the permit. Systems 52, 53, and 54 are identical lime silo processes and will be used to supply lime to heap leach operations for pH control. Lime is pneumatically loaded to the lime silo by truck. Lime is unloaded to an enclosed conveyor, followed by an enclosed transfer to a weigh hopper, and finally loading into a truck. The lime silo loading and unloading operations for each system will be permitted to operate 24 hours per day and 8,760 hours per calendar year. System throughputs will be limited to 100 tons/hr and 150,000 tons/year of lime for silo loading; 200 tons/hr and 150,000 tons/year of lime for silo unloading. Particulate emissions for silo loading operations will be controlled by a bin vent on the silo. Particulate emissions for silo unloading operations will be controlled by enclosures. PM/PM_{10} emissions for the lime silo operations were calculated using emission factors from AP-42, Section 11.12, Concrete Batching, Table 11.12-2.

1.10 SYSTEM 55 – CEMENT SILO (S2.054, PF1.207)

One new cement silo will be added to the permit. System 55 will be used to supply cement for construction activities. Cement is pneumatically loaded to the cement silo by truck. Cement is unloaded to a truck or into a borehole. The cement silo loading and unloading operations for each system will be permitted to operate 24 hours per day and 8,760 hours per calendar year. System throughputs will be limited to 200 tons/hr and 150,000 tons/year of cement for silo loading and unloading operations. Particulate emissions for silo loading operations will be controlled by a bin vent on the silo. Particulate emissions for silo unloading operations will be controlled by best operating practices. PM/PM_{10} emissions for the cement silo operations were calculated using emission factors from AP-42, Section 11.12, Concrete Batching, Table 11.12-2.

1.11 SYSTEMS 56-57-58 – EMERGENCY GENERATORS (S2.055, S2.056, S2.057)

Three new emergency generators will be added to the air permit. System 56 (S2.055), System 57 (S2.056), and System 58 (S2.057) each, will consist of a 2,937 HP diesel fired emergency CAT3516C generator for the A30 area (System 56), A34 area (System 57), and underground area (System 58). The generators have a listed manufacture date of 2012. The diesel generators will be subject to 40 CFR Part 60 Subpart IIII, New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines and 40 CFR Part 63 Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines. Diesel fuel usage for the generators will be limited to 138 gallons per hour. The generators will be permitted to operate 24 hours per day and 100 hours per calendar year for maintenance and testing purposes and an unlimited number of hours for emergency use. The generators will have no add-on controls. PM/PM_{10}, NOx, CO, and VOC emission limits were established using federal emission limits per 40 CFR Part 89.112. SO_2 emission limits were estimated with emission factors from EPA AP-42, Section 3.4, and assuming a 0.0015 wt% sulfur content. Emission factors were back-calculated to have a unit of lbs/gallon using the proposed hourly fuel rate. Barrick shall be required to conduct and record initial EPA Method 9 opacity observations on the generators in order to demonstrate compliance with the opacity requirements listed in the permit.

1.12 SYSTEM 59 – SCALE BUILDING EMERGENCY GENERATOR (S2.058)

A new emergency generator for the scale building will be added to the air permit. System 59 (S2.058) will consist of a 168 HP diesel fired emergency generator. The generator has a listed manufacture date of 2012. The diesel generator will be subject to 40 CFR Part 60 Subpart IIII, New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines and 40 CFR Part 63 Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines. Diesel fuel usage for the generator will be limited to 9.9 gallons per hour. The generator will be permitted to operate 24 hours per day and 100 hours per calendar year for maintenance and testing purposes and an unlimited number of hours for emergency use. The generator will have no add-on controls. PM/PM_{10}, NOx, CO, and VOC emission limits are based on vendor supplied data (attached with application). SO_2 emission limits were estimated assuming a 0.0015 wt% sulfur content, fuel density of 7.08 lbs/gallon, and fuel usage rate of 9.9 gallons/hr. Emission factors were back-calculated to have a unit of lbs/gallon using the proposed hourly fuel rate. Barrick shall be required to conduct and record initial EPA Method 9 opacity observations on the generator in order to demonstrate compliance with the opacity requirements listed in the permit.

1.13 MISCELLANEOUS PERMIT CHANGES

The General Construction Conditions in Section II of the operating permit have been removed for S2.009-S2.010-S2.018g-PF1.161-PF1.162-PF1.163-PF1.169-PF1.170-PF1.171-PF1.172-PF1.173-PF1.174-PF1.175-PF1.179-PF1.180. Conditions have been satisfied.

The Specific Construction Requirements in Section IIA of the operating permit have been removed for System 8 (S2.002-003, testing completed July 2012), System 51A (PF1.161, testing completed June 2012), System 51B (PF1.162, testing completed June 2012), System 51C (PF1.163, testing completed June 2012), and System 51E (PF1.169-170-171-172-173-174-175-179-180, testing completed June 2012).

The Method 9 test duration has been revised from 3 hours to 30 minutes in Section IIA for emission units PF1.151-PF1.153, PF1.155, PF1.157-PF1.159, PF1.164-PF1.168, PF1.176-PF1.178, PF1.181-PF1.191, and PF1.193-PF1.199 that are subject to 40 CFR Part 60 Subpart OOO. The test duration for process fugitive sources subject to Subpart OOO was revised in 2009.

2.0 APPLICABLE REQUIREMENTS

Applicable requirements are those regulatory requirements that apply to a stationary source or to emissions units contained within the stationary source. In Nevada's program, the regulations governing the emissions of air pollutants from which the applicable requirements originate are derived from four categories of regulations. These four categories consist of the requirements contained in the Nevada Revised Statutes (NRS), the Nevada Administrative Code (NAC), the Applicable State Implementation Plan (ASIP), and the Code of Federal Regulations (CFR, contained in various Parts within Title 40).

2.1 GENERALLY APPLICABLE REQUIREMENTS

Of the four categories of regulations governing emissions of air pollutants, there are many generally applicable requirements that apply to stationary sources and emission units located at a stationary source. A comprehensive summary of applicable permit requirements is contained in Sections I through V of the Title V air quality operating permit.

2.2 SPECIFIC APPLICABLE REQUIREMENTS

2.2.1 Nevada Revised Statutes

The Nevada Revised Statutes (NRS) is the statutory authority for the adoption and implementation of administrative regulations. The statutes relating to the control of air pollution are contained in NRS 445B.100 through 445B.640. The NRS specifies that the State Environmental Commission is the governing body given the power to adopt administrative regulations. Because the NRS is the enabling statutory authority, very few specific requirements are contained in the statutes. Rather, the NRS provides, generally, broad authority for the adoption and implementation of air pollution control regulations.

2.2.2 Nevada Administrative Code

The Nevada Administrative Code (NAC) is a collection of administrative regulations that contain specific requirements relating to the control of air pollution. The State Environmental Commission adopts these regulations. The NAC requires that, where state regulations are more stringent in comparison to Federal regulations, the State regulations are applicable. The NAC sets forth, by rule, maximum emission standards for visible emissions (opacity), PM_{10} and sulfur emitting processes. Other requirements are established for incinerators, storage tanks, odors and maximum concentrations of regulated air pollutants in the ambient air. Other NAC regulations specify the requirements for applying for and method of processing applications for operating permits. All of the equipment considered in this application must meet, at a minimum, the applicable standards and requirements set forth in the NAC. Specifically, the emission standards contained in NAC 445B.2203 for particulate matter, 445B.22047 for sulfur emissions, 445B.22017 for opacity, and 445B.22097 for the ambient air quality standards must not be exceeded.

2.2.3 Nevada Applicable State Implementation Plan (ASIP)

The Applicable State Implementation Plan (ASIP) is a document prepared by a State or Local air regulatory agency and required to be submitted to the U.S. EPA for approval. The Title I of the Clean Air Act is the statutory authority for the U.S. EPA regulations that require a State to submit a SIP. The contents of the SIP are intended to show how a State, through the implementation and enforcement of the regulations contained in the SIP, will either show how attainment of the national ambient air quality standards (NAAQS) will be achieved or how a State will continue to maintain compliance with the NAAQS. Nevada's most recent ASIP approved by the U.S. EPA is based on State regulations codified in 1982 with revisions/approvals as recently as September 27, 2012. In general, the regulations contained in the ASIP closely parallel the current NAC regulations. However, because the ASIP is partly based on older air

quality regulations (at this time), compliance with all of the current NAC regulatory requirements does not necessarily ensure compliance with the ASIP requirements. All of the equipment considered in this application must meet, at a minimum, the standards set forth in the ASIP. Specifically, the emission standards contained in ASIP NAC 445B.2203 for particulate matter from fuel burning equipment, 445B.22033 for particulate matter from sources not otherwise limited, 445B.22047 for sulfur emissions from fuel burning equipment, 445B.22017 for maximum opacity, and 445B.22097 for the ambient air quality standards must not be exceeded.

2.2.4 New Source Performance Standards (NSPS)

The U.S.EPA has promulgated maximum emission standards and monitoring / recordkeeping methods for selected source categories. These standards are contained in Title 40 of the CFR, Part 60, and are known as the New Source Performance Standards (NSPS).

The heat input rating increase from 8.0 to 12.6 MMBtu/hr for the two existing propane-fired heaters (System 11) will cause the heaters to be subject to NSPS 40 CFR 60 Subpart Dc requirements, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. The rule applies to steam-generating units with heat inputs greater than 10 MMBtu/hr. The heaters will only be subject to the reporting and recordkeeping requirements listed in 40 CFR 60.48c (propane heaters exempt from all other requirements).

The revised Cortez Hills Metallic Ore Crushing Plant (Systems 31 and 32A) are still subject to Subpart LL – Standards of Performance for Metallic Mineral Processing Plants.

The new lime silos (Systems 52-53-54) and cement silo (System 55) are not subject to any NSPS standards.

The new emergency generators (Systems 56-57-58-59) will be subject to New Source Performance Standards (NSPS) 40 CFR, Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. The generators will have specific federal emission standards for PM_{10}, NOx + nonmethane hydrocarbons (NMHC), and CO. In addition, the sulfur content and cetane index will have specific federal emission limits.

2.2.5 40 C.F.R. Parts 61 and 63 National Emission Standards for Hazardous Air Pollutants

Parts 61 and 63 establish the National Emission Standards for Hazardous Air Pollutants (NESHAPS).

The 12.6 MMBtu/hr heaters (System 11) are not subject to 40 CFR Part 63 Subpart JJJJJJ Propane fired heaters are exempt.

The new emergency generators (Systems 56-57-58-59) are subject to the requirements of 40 CFR Part 63 Subpart ZZZZ (as existed on July 1, 2009), NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE) specified in 40 CFR Part 63.6590 which states: an affected source that is a new or reconstructed stationary RICE located at an area source, must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

The gasoline dispensing stations (Systems 49A/49B/49C) are subject to 40 CFR Part 63 Subpart CCCCCC, NESHAP for Gasoline Dispensing Facilities.

2.2.6 40 CFR Parts 72 to 78 Acid Rain Exemption

The Barrick facility is exempt from the acid rain provisions under 40 C.F.R. Parts 72 to 78 because there are no units listed in Tables 1, 2, or 3 of §73.10 at the facility, and there are no utility units at the facility that serve a generator that produces electricity for sale.

2.2.7 40 CFR Part 52.21 Prevention of Significant Deterioration Regulations (PSD)

The U.S. EPA delegated implementation of the federal PSD regulations to the State of Nevada; and NDEP-BAPC implements the federal PSD regulations through a delegation agreement with EPA. These regulations contained at 40 CFR Part 52.21 specify federally required permitting procedures for each "major stationary source". The PSD regulations define a "stationary source" as "any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act." A "building structure facility or installation" is defined as "all of the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same "Major Group" (i.e., which have the same first two digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement.

2.2.7.1 Prevention of Significant Deterioration Determination

As discussed above, 40 CFR Part 52.21 specifies that Prevention of Significant Deterioration (PSD) review is required for any new major stationary source or any major modification. A major source is defined as any pollutant emitting activities, which belong to the same two digit Source Industry Classification (SIC), and:

1. Emit 100 tons/yr or more of a regulated air contaminant as one of the listed categories of sources listed in 40 CFR 52.21; or
2. Emits 250 tons/yr or more of a regulated air contaminant and belong to any other category sources. "Major" is defined as the potential to emit of a stationary source, which equals or exceeds a specified threshold (in tons per year) of any air pollutant regulated under the Clean Air Act (40 CFR 52.21(b)(1)).

The first threshold is for a stationary source that emits or has the potential to emit 100 tons per year or more and is defined as one of 28 specific categories of sources (see 40 CFR 52.21(b)(1)(i)(a)). The other applicability threshold is for any other stationary source that emits or has the potential to emit 250 tons per year (see 40 CFR 52.21(b)(1)(i)(b)). As mentioned above, the SIC code for this facility is 1041. Therefore, the major SIC grouping is 10, which is identified as "Metal Mining" in the SIC manual. "Metal Mining" is not one of the 28 specific categories. Therefore, major source status is classified at the 250 tons per year emission threshold for any pollutant regulated under the Act. As identified in Section 4.0 of this review, the Barrick facility is currently permitted and will remain permitted with the proposed modifications to emit less than the 250 tons per year threshold for several pollutants and, as such, is not classified as a major source for PSD purposes.

2.2.8 Greenhouse Gas Evaluation

Proposed facility-wide annual greenhouse gas (GHG) emissions for Barrick are presented in Table 1. The GHG emissions associated with the Barrick facility are from the propane fired boilers, soil remediation activities, propane fired heaters, and diesel engines. The GHG evaluation indicates that Barrick is not a major stationary source with respect to GHG emissions (less than 100,000 tons per year CO2e-basis). The proposed minor revision results in a net decrease for GHG emissions. Hence, Barrick is not subject to PSD applicability requirements. The detailed GHG emissions inventory for the Barrick facility is included in Appendix 2.

TABLE 1

BARRICK CORTEZ
GREENHOUSE GAS EMISSIONS

System	GHG Emissions (tons/year)			
	Mass-Based CO_2	Mass-Based CH_4	Mass-Based N_2O	CO2e-basis
Pre-Revision GHG Totals	42,246.7	1.0	2.5	42,999.2
Post-Revision GHG Totals	40,202.5	0.9	2.4	40,952.7
Net Change GHG Totals	- 2044.2	- 0.1	- 0.1	- 2,046.5

2.2.9 Compliance Assurance Monitoring (CAM)

The U.S. EPA has promulgated requirements for sources to provide detailed monitoring plans that will ensure compliance with all applicable requirements. These monitoring requirements are contained in 40 CFR Part 64. Section 64.2 specifies that these monitoring requirements apply to a "pollutant specific emission unit at a major source" if **all** of the following are satisfied:

- The unit is subject to an emission limitation or standard;
- The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- The unit has potential pre-control device (uncontrolled) emissions equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

A CAM plan is not required for Barrick because the existing facility along with the proposed minor revision does not have any sources in an uncontrolled configuration that equal or exceed greater than 100 tons per year.

2.2.10 New Applicable Requirements

In accordance with NAC 445B.3368.2(h)(2), Barrick must comply in a timely manner with any new applicable requirement that becomes effective during the term of the operating permit.

3.0 EMISSIONS INVENTORY

As part of this review, NDEP-BAPC staff evaluated the emissions estimates provided by Barrick for the proposed minor modification. The facility wide proposed annual PM, PM_{10}, NOx, SO_2, CO, and VOC emissions are presented in Table 2. Emission worksheets were prepared by NDEP-NDEP-BAPC staff based on emissions information supplied by Barrick and are included in Attachment 1.

TABLE 2 – BARRICK FACILITY'S EMISSIONS (TONS PER YEAR)

	Emissions – Tons per Year					
	PM	**PM10**	**NOx**	**SO2**	**CO**	**VOC**
PERMITTED EMISSIONS – POST REVISION	**206.69**	**118.62**	**26.83**	**2.80**	**66.31**	**16.79**
INSIGNIFICANT ACTIVITIES (No Changes)	**4.47**	**4.47**	**97.21**	**9.14**	**16.59**	**3.06**
FACILITY-WIDE POST MINOR REVISION TOTALS	**211.16**	**123.09**	**124.04**	**11.94**	**82.90**	**19.85**
FACILITY-WIDE PRE MINOR REVISION TOTALS	**206.25**	**118.97**	**121.62**	**10.58**	**25.60**	**12.45**
MINOR REVISION CHANGES	**+ 4.91**	**+ 4.12**	**+ 2.42**	**+ 1.36**	**+ 57.30**	**+ 7.40**

Based on the change in emissions detailed above, the proposed revision qualifies as a minor revision under the Title V program.

4.0 AMBIENT AIR QUALITY IMPACT

The purpose of the air quality analysis is to demonstrate that the emissions from the process will not cause or contribute to a violation of any applicable Nevada Ambient Air Quality Standards (NAAQS). Nevada Administrative Code (NAC) 445B.310.1(b)(2) requires an air dispersion modeling analysis to be completed by the facility if a revision to an existing air permit is greater than 10 tons of a regulated air pollutant per year. Barrick's proposed minor revision is above the 10 ton limit (CO > 10 tons increase) that would require Barrick to perform the air dispersion analysis. Barrick (consultant Air Sciences) submitted a modeling analysis with the proposed revision.

4.1 CLASSIFICATION OF AIR BASIN

Barrick is located in Air Quality Hydrographic Basin 54. Basin 54 is currently unclassified for PM_{10}, CO, NO_x, SO_2, O_3, and lead criteria pollutants, which have an ambient air quality standard. The unclassifiable designation for CO, NO_x, SO_2, O_3, and lead criteria pollutants has been assigned due to a lack of monitoring data available to properly classify an air basin. Access to the plant property by the general public is limited by fencing and appropriate posting. The modeling parameters for the existing emission sources from the previously revised Barrick Class I Air Permit were updated to account for the changes with this revision. The meteorological data (Boulder Valley) that was used in the last permit revision was used in the updated modeling analysis.

4.2 METHOD OF AIR QUALITY MODELING ANALYSIS

Barrick's consultant Air Sciences performed the air dispersion modeling using AERMOD (version 12060) for PM_{10}, SO_2, NOx, and CO. The EPA approved AERMOD model was used to determine the hourly and annual air quality impacts. AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. NDEP-BAPC verified the modeling input parameters and performed the air dispersion modeling to confirm the results that were submitted with the application.

4.3 RESULTS

The AERMOD model results performed by Air Sciences are summarized in Table 3. NDEP-BAPC results were in agreement with the Air Sciences results. $PM_{10,}$ SO_2, NOx, and CO concentrations are from the updated modeling analysis based on the proposed minor modification. The ozone concentration was determined from the EPA Scheffe Ozone Model. The modeled concentrations for all modeled pollutants are below the Nevada ambient air quality standards at the facility fenceline. As a result, there will be no exceedances of ambient air quality standards at points accessible to the general public. Hard copies of the modeling results are included with the application. Electronic copies for the air dispersion modeling performed by Air Sciences and NDEP-BAPC are located at P:\BAPC\FI\A0001 - Barrick Cortez mine\1041-2141 Cortez\ #6980-Minor Mod 0612\Modeling.

TABLE 3. AERMOD AIR DISPERSION MODELING SUMMARY

Criteria Pollutant	Averaging Period	Ambient Standard ($\mu g/m^3$)	Maximum Impact ($\mu g/m^3$)	Location UTM meters *Northing*	Location UTM meters *Easting*	Impact % Standard
PM_{10}	24-hour Annual	150 50	32.8* 11.0*	4,458,745 4,444,194	525,680 533,713	21.9 22.0
SO_2	3-hour 24-hour Annual	1,300 365 80	83.0 32.0 2.5	4,444,816 4,444,816 4,444,600	532,194 532,194 532,200	6.4 8.8 3.1
NO_x	Annual	100	45.1	4,442,912	532,195	45.1
CO > 5,000'	1-Hour 8-Hour	40,500 7,000	1,828.1 516.9	4,443,000 4,442,887	532,200 532,195	4.5 7.4
O_3	1-Hour	235	36.9	---	---	15.7

*PM_{10} includes background concentration (10.2 $\mu g/m^3$, 24 hour; 9.0 $\mu g/m^3$, annual)

5.0 SIGNIFICANT CHANGE DETERMINATION

Given the information provided by Barrick in the Class I minor revision application, the NDEP-BAPC determined that this minor revision will not result in a significant change in air quality at any location where the public is present on a regular basis. This determination is based on the fact that the minor revision is not anticipated to result in a significant increase in emissions. Also based on the location of the Barrick facility, the presence of the public on a regular basis is very remote. Because this revision will not result in a significant change in the air quality, pursuant to NAC 445B.3395(8)(c) the provisions of NAC 445B.3395(6) and NAC 445B.3395(7), public notice provisions, do not apply.

6.0 CONCLUSIONS/RECOMMENDATIONS

Based on the above review and supporting data and analyses, Barrick's request for a minor revision to the Class I operating permit for the Barrick Cortez, Inc. operations will not violate any applicable requirements. As a result, it is recommended that Barrick's request for a minor revision to their Class I operating permit be approved.

Attachment 1 Minor Revision Emissions Calculations
Attachment 2 Draft Operating Permit

Randy Phillips Date
Staff Engineer
Bureau of Air Pollution Control

Jeffrey Kinder, P.E. Date
Supervisor, Permitting Branch
Bureau of Air Pollution Control

Attachment 1

Minor Revision Emission Calculations

Attachment 2

Draft Operating Permit